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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,810	08/08/2001	Sok Joo Lee	8734.011.00- US	9929
30827 7590 01/14/2008 MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			EXAMINER SEFER, AHMED N	
			ART UNIT 2826	PAPER NUMBER
			MAIL DATE 01/14/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

09/923,810

Applicant(s)

LEE ET AL.

Examiner

A. Sefer

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10/31/07.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-20 is/are pending in the application.
- 4a) Of the above claim(s) 8-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 15-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/31/2007 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 15-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The application as originally filed does not specifically support the claim limitation "the alloy layer is directly connected to the transparent electrode." The specification merely discloses that the gate pad which includes the alloy layer is directly connected to the transparent electrode. There is no discussion of the gate electrode which also includes the alloy layer being directly connected to the transparent electrode.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 15-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of claim 15 calling for, “wherein the gate electrode and the gate pad both include a first layer formed of a first metal and an alloy layer ... the alloy layer is directly connected to the transparent electrode” is not well understood. For examining purposes, it will be assumed to read, “wherein the gate electrode and the gate pad both include a first layer formed of a first metal and an alloy layer ... wherein the gate pad which includes the alloy layer is directly connected to the transparent electrode.”

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Jeong et al. (“Jeong”) USPN 6,081,308.

Jeong discloses a liquid crystal display device, wherein a conductive line 220 is in electrical contact with a transparent electrode 36a/210 (figs. 11 and 25) comprising a first metal layer 22/221 including an aluminum-alloy (as recited in claim 2) having a thickness (col. 5, lines 62-64) within the recited range (as recited in claim 3); and an alloy layer 24/222 (e.g.

MoW alloy, col. 6, lines 10-14) formed on the surface of the first metal layer; and the alloy layer directly connected to the transparent electrode.

Note that the method of formation of the alloy layer (by heat generated by continuously depositing a second metal on the first metal layer) and entirely removing the second metal layer, constitutes a process and "product by process" claims are directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685 and *In re Thorpe*, 227 USPQ 964, 966. Further, note that the applicant has the burden of proof in such cases, as the above case law makes clear. Also see MPEP 2113.

Re claim 6, Jeong discloses said conductive line including a gate pad which is one of a gate pad, gate line and a gate electrode.

8. Claims 15-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Jeong et al. ("Jeong") USPN 6,081,308.

Jeong discloses in figs. 11-25 a liquid crystal display device, comprising: a substrate; a gate electrode 210 disposed on the substrate; a gate pad 220 disposed on the substrate; an insulating film 26/300 disposed on the gate electrode and the gate pad; an active layer 28/ 400 disposed on the insulating film above the gate electrode; an ohmic contact layer 30/510/520 disposed on portions of the active layer; a source electrode 32a/610 and a drain electrode 32b/620 disposed on the ohmic contact layer; a passivation layer 34/700 disposed on the source and drain electrodes or disposed on the insulating layer (**as recited in claim 19**), covering side surfaces of the source and drain electrodes (**as recited in claim 18**) or contacting a portion of the active layer between the source and drain electrodes (**as recited in claim 20**); a pixel electrode 36/800 disposed on the passivation layer and contacting the drain electrode; and a transparent

electrode 36a/810 disposed on the passivation layer or disposed within a via formed through the passivation layer and insulating film (**as recited in claim 17**) contacting the gate pad or the alloy layer of the gate pad (**as recited in claim 16**), wherein the gate electrode and the gate pad both include a first layer formed of a first metal 24/221 and an alloy layer 26/222 formed on the surface of the first metal layer; wherein the gate pad which includes the alloy layer is directly connected to the transparent electrode.

Note that the method of formation of the alloy layer (by heat generated by continuously depositing a second metal on the first metal layer) and entirely removing the second metal layer, constitutes a process and "product by process" claims are directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685 and In re Thorpe, 227 USPQ 964, 966. Further, note that the applicant has the burden of proof in such cases, as the above case law makes clear. Also see MPEP 2113.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong in view of Kubo JP 6-77482 (of record).

Jeong disclose the device structure as recited in the claim, but does not teach an alloy layer formed from an alloy of a first metal and a second metal deposited onto the first metal.

Kubo discloses (fig. 1 and abstract and pars. 16 and 17 of the machine translated document) a liquid crystal display device, comprising: an alloy layer 17 being formed from an alloy including a first metal and a second metal deposited onto the first metal layer, wherein the second metal is subsequently removed.

Therefore, in view of Kubo's teachings, one having an ordinary skill in the art at the time the invention was made would be motivated to modify Jeong by incorporating an alloy layer formed from an alloy of the first metal and a second metal. The motivation would have been to yield a device without a hillock as taught by Kubo (abstract).

Re claim 5, Kubo discloses the second metal includes Mo which is one of molybdenum and chrome.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (571) 272-1921.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on (571) 272-1236.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ANS  
January 9, 2008

/A. Sefer/  
Primary Examiner  
Art Unit 2826